Minimal Working Example

What this textbook section is about. One or two sentences.

Motivating Questions.

• Question 1

• Question 2

Subsection Title

Start every file with a section.

Problem Types in the Text

Exploration 1 This is a question where the answer is not provided in the text. The idea is that students will work on together in lecture. It often motivates the upcoming content.

- a. Problem 1
- b. Problem 2

Problem 2 Use a Problem when students are supposed to enter an answer. These should be straightforward things or the answer should be in a hint or explanation. And the answer should be given in the printed text. y = 10x

Hint: Hint here

Explanation. One approach to pattern recognition is to look for a relationship in each row. Here, the y-value in each row is always 10 more than the x-value. So the pattern is described by the equation y = 10x

Example 1. A standard example with solution in the text.

Explanation. Every example should have an explanation.

Learning outcomes:

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Other Environmentsin the Text

Remark 1. Something you want to call attention to in the text.

Definition 1. Define a word or words. Be sure to use the dfn command around your vocab words.

Callout. Something that you want to standout that is not a remark. Basically just puts it in a blue box.

Summary. • First point

• Second point

Tables and Graphs

How to make a table:

$$\begin{array}{c|cccc} t & V \\ \hline 0 & 0.0 \\ 1 & 0.5 \\ 2 & 1.0 \\ 3 & 1.5 \\ 4 & 2.0 \\ 5 & 2.5 \\ \end{array}$$

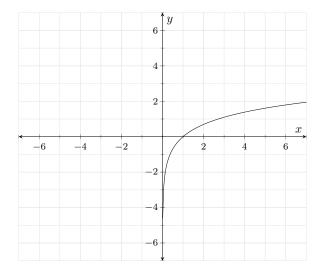
Side-by-side tables (or images or whatever):

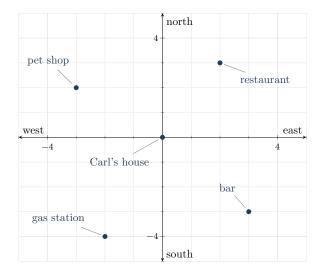
t	r(t)	_ 7	t	s(t)
0	12	()	12
3	10	;	3	9
6	8	(3	6.75
9	6	(9	5.0625

How to make an image:



Draw graphs in tikzi when possible. Here are two.





You can also add Desmos interactives. Create them in a Desmos account (I think we have an OSU one. We should look into that!). Save them. Then pull the graph number out of the url.

Desmos link: https://www.desmos.com/calculator/lxllnpdi6w

Online Features

To add a url, use the link command. For more about formatting in Ximera see this url

You can also embed YouTube videos.

YouTube link: https://www.youtube.com/watch?v=0aQpLSu2fMs

See this url at $\label{lem:seminosu} {\tt Mattps://ximera.osu.edu/intro/gettingStarted/graphicsAndVideos/graphicsAndVide$

See YouTube at https://www.youtube.com/

Overviews

Each Unit has an overview with the organization and learning objectives

Overview. • Generally a folder

- $(a) \ \textit{some stuff covered in these sections a subtopic another subtopic}$
- (b) More stuff
- \bullet Another Folder
 - (a) Stuff

Objectives.

Learning Objectives Category (Course level learning objective)

- $\bullet \ \ more \ specific \ goal$
- another one

Another Category

- \bullet Linear
- Parabolas
- $\bullet \ \ Polynomials$

Homework

Each homework problem should be it's own file. Then the homework is put together using an exerciselist file. See a Unit 1 folder for an example. Be sure to keep all the same conventions, just changing the actual problem.

Some Ximera problem types are available in the footnote . We can add more here as we come across them.

Labeling and Referencing

Depending upon how a source file is compiled, the numbering of examples may be changed. When compiling a single source file, this could be a small value, but when included and compiled as a larger file or as other examples are included, that number could change. Using Labels and References will allow us to refer to the examples by number in the text, but will adjust the numbering of those references to match the numbering of the example at compile-time.

Adjusting the numbering for exercises is handled through labels (using the \label command) and references (using the \label command). The \label command adds a virtual label (which you have to give a name for), which identifies the counter associated with the object you're labelling. It doesn't typeset anything, just identifies the value of that particular counter with the name of the label. The \label command prints out the value of that label (you have to reference the name of the label you have previously created).

For example, here is a sample example:

Example 2. A Sample example is here

In the code, immediately after \begin{example} (but before the text of the example), you'll see \label{example:SampleExample}. This creates the label for the example counter that we've named example:SampleExample. (It could have been named something as simple as "Ex" or "a". The name "example:SampleExample" was picked for readability.) The counter value is set at that $\begin{example} example \end{example}$ statement, so your $\abelle{example}$ should be immediately after it, before any other text.

When we want to reference this example later, we have to use $\text{ref}\{\text{example:SampleExample}\}$, which here has value 2.

This means the code "Example \ref{example:SampleExample}" is typeset as "Example 2". The numbering will be updated according to how the Example is numbered when compiled.

Callout. In order for this referencing to work, you have to compile the source file TWICE!

See in the footnote at https://ximera.osu.edu/intro/gettingStarted/questionAndAnswerTypes/questionAndAnswerTypes

The first time through, the compiler will assign values to the counters and store the values of the labels in the aux files it generates. The second time through, the compiler will actually add the values of those references to the typeset document. (This is a standard issue for virtually all compilers with preprocessing options. Most run twice automatically, but LaTeX/pdfLaTeX defaults to only running once.) If you see the references showing up as question marks instead of as numbers, try compiling another time or two.

In LaTeX, captions/labels/references are for figures, not for images or tikzpictures. To add a caption/label/reference for a graph, it has to be in an outer figure environment, so put the whole thing inside an \begin\{figure\} \ldots \begin\{figure\} \ldots \begin\{figure\}\ block. LaTeX places figures wherever it decides is best, not based on where it appears in the source by using the option !h. This makes the opening tag look like: \begin\{figure\}[!h]. (The exclamation point is an override to the default figure setup, and the h says you want the figure here.)

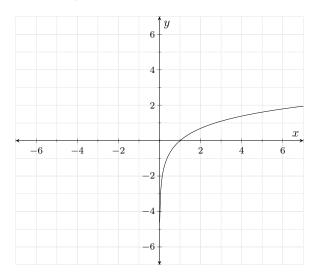


Figure 1: Here is an example graph

The last three lines should be the $\setminus caption\{\ldots\}$, followed by $\setminus label\{\ldots\}$, then the $\setminus end\{figure\}$. The order here is important. The caption statement has to come before the label.

Referencing these figures is exactly the same as with examples: Here was Figure 1